

REMARKS / ARGUMENTS

Examiner Klimowicz is thanked for the thorough examination of the subject Patent Application. The claims have been carefully reviewed and amended, and are considered to be in condition for allowance.

The structure and method of the invention is for minimizing EME (Electromagnetic Emission) and the crosstalk between the signal lines which are used to write and read the tracks of magnetic disk drives. These signal lines are located on magnetic trace suspension assemblies which move above the magnetic disk drives. The structure and method utilize well-placed single and multiple crossovers on either or both of the lines used to read and write the tracks on magnetic disks. In addition, the structure and method utilize the parasitic capacitances between the write and read lines to couple beneficial voltages which cancel the unwanted crosstalk noise.

Reconsideration of the rejection of claims 1, 3-6, 19 and 21-24, under 35 U.S.C. 103(a), as being unpatentable over Carpenter et al. (WO 98/20485 A1) in view of Murata et al. (JP 06-342858 A), is requested based on the following.

In reply to the examiner's "Response to Arguments" on page 12 of the 10/20/11 office action, there are three items of rebuttal.

- 1) The structure of Murata/Carpenter cannot inherently perform the function of the instant application. Murata/Carpenter uses twisted wires to “self-shield” traces from the outside disturbances. On the other hand, the instant application requires perfectly balanced mid-point crossings of either 2 read lines or 2 write lines, so as to differentially cancel out the noise from 2 read lines onto 2 write lines or vice versa. There is no inherent guarantee that the twisted wire structure of Murata/Carpenter would contain perfect mid-point crossings and be able to perform the instant function.
- 2) Murata is used in the magnetic realm and does not solve electric field noise using capacitances as in the instant application, Murata discloses “magnetic fields emanating from a pair of lines”, while the instant application is concerned with balancing the electric fields and capacitive pickup using midpoint crosspoints to equalize the distances between write lines and read lines.
- 3) Instant application independent claims 1 and 19 have been amended to satisfy the statement from the 2/22/11 Judges decision that the instant claims did not have certain claim language directed to the Appellant’s argued distinction. The following clauses have been added to claims 1 and 19.

“wherein said read lines are crossed so that the average distance from each said write line to each said read line is equal.

wherein if said two write lines carry completely unrelated signals, each said read line gets an equal dose of disturbance on each of said write lines,

wherein each differential noise pickup detected on said read lines will eliminate capacitive pickup on said read lines.”

Independent claim 1 is shown below.

1. A crosstalk and EME (electromagnetic emission) minimizing trace suspension assembly structure comprising:
 - multiple write lines which are connected between a preamplifier connection point and slider write contact pads;
 - multiple read lines driven by preamplifier circuits;
 - said slider write contact pads, which connect said write lines to said trace suspension assembly structure;
 - slider read contact pads, which connect said read lines to said trace suspension assembly structure; and
 - multiple write lines driven by preamplifier circuits,wherein said multiple read lines are crossed half-way, are used to cancel out time-delayed (transmission line effects) parts of said crosstalk and said EME,
 - wherein a single crossing point of said write lines between said preamplifier connection point and said slider write contact pads is placed halfway between said preamplifier connection point and said slider write contact pads, can be used in order to cancel out said crosstalk and said EME,
 - wherein said write lines have parasitic capacitance between the write lines and the read lines,
 - wherein said parasitic capacitances between the write lines and read lines are used to cancel crosstalk, E-field, noise between said write lines and said read lines
 - wherein said read lines are crossed so that the average distance from each said write line to each said read line is equal.
 - wherein if said two write lines carry completely unrelated signals, each said read line gets an equal dose of disturbance on each of said write lines,
 - wherein each differential noise pickup detected on said read lines will eliminate capacitive pickup on said read lines.

Based on the fact that the structure of Murata/Carpenter does not inherently perform the function of the instant application, and that Murata is used in the magnetic realm and does not solve electric field noise using capacitances as in the instant application, the instant application is not obvious using Carpenter et al. in view of Murata. The allowance of independent claims 1 and 19 is respectfully requested. In addition, the allowance of dependent claims 3-4 and 21-22, which depend on claims 1 and 19 respectively, is also requested.

It is requested that should there be any problems with this Amendment, please call the undersigned Attorney at (845) 452-5863.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'SBA', with a long horizontal flourish extending to the right.

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